

The Anaconda Aluminum Story



Page 6:
This 27-percent-Anaconda-owned bauxite mining operation near Spur Tree, Jamaica, can produce 1.3 million tons of aluminum ore annually (top).

Alumina arrives by barge at the Seebree (Ky.) reduction plant (center).

The Columbia Falls rectifier control room regulates the amperage and voltage going to each reduction pot (bottom).

Page 7:
Molten aluminum freshly tapped from the reduction pot is poured into a transfer crucible for transport to a holding furnace at the Columbia Falls reduction plant.

crucible for pickup and delivery to a holding furnace, where the collected pool of metal awaits casting.

Each load is weighed, and samples are taken for spectrographic analysis on a computerized Quantometer in the Quality Control Lab. This is to determine the exact proportion of other metals in the aluminum alloy. Different end products demand alloys of varying quality, determined by the amounts of these metals remaining after reduction.

Some of the molten metal is slowly poured into molds and cast into 12,000- to 15,000-pound sheet ingots, which are cooled and stacked in a storage yard for shipment to the Terre Haute rolling mill or other customers. Other metal is cast into more easily stackable T-bars. All told, Columbia Falls has an annual primary aluminum production capacity of 180,000 tons.

The Columbia Falls reduction plant contained state-of-the-art equipment when it was built, but much has changed in 25 years. The plant has recently completed the installation of new pots using Sumitomo of Japan technology, which includes emission control systems and handling equipment. This rebuild of the facilities cost \$42 million, and will reduce power consumption by about 15 percent.

The changeover brings the plant into compliance with some of the toughest environmental standards in the country.

The Columbia Falls air is protected by a sophisticated process of dry scrubbing, which returns fluoride to the potlines for reuse. Out-plant environmental technicians constantly monitor the local environment, including sites inside nearby Glacier National Park, to assure continuing compliance with Montana's environmental regulations. Recent tests show marked reduction in fluoride emissions.

The Sebree (Ky.) plant carries out the same reduction process as Columbia Falls, but since it was built at a much later date, it does the job with the latest computerized reduction technology. While Columbia Falls needed an overhaul to meet various standards, the Sebree process is intrinsically clean and efficient. The plant produces ingot, extrusion billet, and foundry bar.

In 1979, Sebree added a third potline at a cost of \$84 million, raising its annual capacity from 120,000 to 180,000 tons of primary aluminum. The plant was designed for a fourth potline, which could ultimately increase its capacity to 240,000 tons per year.

